

# AERIAL WORK PLATFORM SAFETY

## OSHA Standard 1926.453

Manlifts and scissor lifts are two pieces of equipment that many workers can't imagine working without. This equipment, if used correctly, provides quick and safe access to work areas that at one time could only be reached from scaffolding or a crane's manbasket. These lifts, collectively called Aerial Work Platforms, are important tools. But as with any tool, there are right and wrong ways to use them safely.

The most important tip to remember before operating any aerial lift platform is *always read and follow* the manufacturer's safety and operation manual! This information must be kept on the rig, and can usually be found in a PVC tube that's tied to the machine's frame or rails.

### Safe Operating Procedures for Both Manlifts and Scissor Lifts:

- Only trained and authorized people should operate the lift. A qualified instructor must make sure that every operator reads and/or understands the equipment's safety and operating instructions. This includes all of the warning decals and labels mounted on the machine.
- Always check for overhead obstructions before driving or elevating the platform.
- Refuel tanks only when the unit is turned off. If battery powered, the batteries should be charged only in a well-ventilated area, away from any open flame.
- Prior to each shift a safety the operator should complete inspection; this includes both a visual inspection and a function test. If a problem is found, get the lift repaired.
- Elevate the platform only when it is on a firm, level surface. Although many lifts look like a rough terrain piece of equipment, they are not. Their large tires do allow the equipment to access somewhat difficult areas, but once in position they are designed to be out of level only 5° while in operation. This amounts to 10 inches in a 10 foot wheel span. In addition, the lift must have a tilt alarm that activates when the machine is more than 5° out of level.

Scissor lifts are efficient one-direction lifts. They provide a solid surface to work from, but always remember:

- Guardrail, midrails and toeboards must be in place. The toe board can be omitted at the door.
- The platform must be equipped with a mechanical parking brake that will hold the unit securely on any slope it is capable of climbing. The brake should be tested periodically.
- Never use the lift's rails, planks across the rails, or a ladder, to gain additional height.

Unique hazards for manlifts: Manlifts can move in more than a single direction, increasing the risk of mishaps, so it's important to remember the following:

- Whenever working out of a manlift, a full body harness must be worn, and properly attached to the basket. A sudden jolt has thrown people from manlifts, before they could react.
- Always maintain a safe distance from debris piles, drop-offs, floor openings, etc.
- Never drive the manlift when it is elevated above the limit the manufacturer considers safe. Each piece of equipment will state what the maximum extension can be while being driven.

Used correctly, aerial work platforms can be priceless, timesaving assets. Operate them without regard to their limitations, and this same equipment will put you and those around you, at undue risk.

**OSHA Regulations (Standards - 29 CFR)**  
**Aerial lifts. - 1926.453**

1926.453(a)

"General requirements."

1926.453(a)(1)

Unless otherwise provided in this section, aerial lifts acquired for use on or after January 22, 1973 shall be designed and constructed in conformance with the applicable requirements of the American National Standards for "Vehicle Mounted Elevating and Rotating Work Platforms," ANSI A92.2-1969, including appendix. Aerial lifts acquired before January 22, 1973 which do not meet the requirements of ANSI A92.2-1969, may not be used after January 1, 1976, unless they shall have been modified so as to conform with the applicable design and construction requirements of ANSI A92.2-1969. Aerial lifts include the following types of vehicle-mounted aerial devices used to elevate personnel to job-sites above ground:

1926.453(a)(1)(i)

Extensible boom platforms;

1926.453(a)(1)(ii)

Aerial ladders;

1926.453(a)(1)(iii)

Articulating boom platforms;

1926.453(a)(1)(iv)

Vertical towers; and

**..1926.453(a)(1)(v)**

1926.453(a)(1)(v)

A combination of any such devices. Aerial equipment may be made of metal, wood, fiberglass reinforced plastic (FRP), or other material; may be powered or manually operated; and are deemed to be aerial lifts whether or not they are capable of rotating about a substantially vertical axis.

1926.453(a)(2)

Aerial lifts may be "field modified" for uses other than those intended by the

manufacturer provided the modification has been certified in writing by the manufacturer or by any other equivalent entity, such as a nationally recognized testing laboratory, to be in conformity with all applicable provisions of ANSI A92.2-1969 and this section and to be at least as safe as the equipment was before modification.

1926.453(b)

"Specific requirements."

1926.453(b)(1)

Ladder trucks and tower trucks. Aerial ladders shall be secured in the lower traveling position by the locking device on top of the truck cab, and the manually operated device at the base of the ladder before the truck is moved for highway travel.

1926.453(b)(2)

Extensible and articulating boom platforms.

1926.453(b)(2)(i)

Lift controls shall be tested each day prior to use to determine that such controls are in safe working condition.

1926.453(b)(2)(ii)

Only authorized persons shall operate an aerial lift.

..1926.453(b)(2)(iii)

1926.453(b)(2)(iii)

Belting off to an adjacent pole, structure, or equipment while working from an aerial lift shall not be permitted.

1926.453(b)(2)(iv)

Employees shall always stand firmly on the floor of the basket, and shall not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position.

1926.453(b)(2)(v)

A body belt shall be worn and a lanyard attached to the boom or basket when working from an aerial lift.

Note to paragraph (b)(2)(v): As of January 1, 1998, subpart M of this part

(1926.502(d)) provides that body belts are not acceptable as part of a personal fall arrest system. The use of a body belt in a tethering system or in a restraint system is acceptable and is regulated under 1926.502(e).

1926.453(b)(2)(vi)

Boom and basket load limits specified by the manufacturer shall not be exceeded.

1926.453(b)(2)(vii)

The brakes shall be set and when outriggers are used, they shall be positioned on pads or a solid surface. Wheel chocks shall be installed before using an aerial lift on an incline, provided they can be safely installed.

1926.453(b)(2)(viii)

An aerial lift truck shall not be moved when the boom is elevated in a working position with men in the basket, except for equipment which is specifically designed for this type of operation in accordance with the provisions of paragraphs (a)(1) and (2) of this section.

**..1926.453(b)(2)(ix)**

1926.453(b)(2)(ix)

Articulating boom and extensible boom platforms, primarily designed as personnel carriers, shall have both platform (upper) and lower controls. Upper controls shall be in or beside the platform within easy reach of the operator. Lower controls shall provide for overriding the upper controls. Controls shall be plainly marked as to their function. Lower level controls shall not be operated unless permission has been obtained from the employee in the lift, except in case of emergency.

1926.453(b)(2)(x)

Climbers shall not be worn while performing work from an aerial lift.

1926.453(b)(2)(xi)

The insulated portion of an aerial lift shall not be altered in any manner that might reduce its insulating value.

1926.453(b)(2)(xii)

Before moving an aerial lift for travel, the boom(s) shall be inspected to see that it is properly cradled and outriggers are in stowed position except as provided in paragraph (b)(2)(viii) of this section.

1926.453(b)(3)

Electrical tests. All electrical tests shall conform to the requirements of ANSI A92.2-1969 section 5. However equivalent d.c.; voltage tests may be used in lieu of the a.c. voltage specified in A92.2-1969; d.c. voltage tests which are approved by the equipment manufacturer or equivalent entity shall be considered an equivalent test for the purpose of this paragraph (b)(3).

**..1926.453(b)(4)**

1926.453(b)(4)

Bursting safety factor. The provisions of the American National Standards Institute standard ANSI A92.2-1969, section 4.9 Bursting Safety Factor shall apply to all critical hydraulic and pneumatic components. Critical components are those in which a failure would result in a free fall or free rotation of the boom. All noncritical components shall have a bursting safety factor of at least 2 to 1.

1926.453(b)(5)

Welding standards. All welding shall conform to the following standards as applicable:

1926.453(b)(5)(i)

Standard Qualification Procedure, AWS B3.0-41.

1926.453(b)(5)(ii)

Recommended Practices for Automotive Welding Design, AWS D8.4-61.

1926.453(b)(5)(iii)

Standard Qualification of Welding Procedures and Welders for Piping and Tubing, AWS D10.9-69.

1926.453(b)(5)(iv)

# **Aerial Lift Safety**

## ***Safety Training Handout***

**An aerial lift is “any vehicle-mounted device ... which is used to position personnel.”**

### **■ Aerial lift injuries and fatalities include:**

- Falls (the most common injury)
- Blunt trauma from falling objects
- Shocks
- Electrocution
- Crushing injuries
- Entrapment injuries

### **■ To prevent an aerial lift accident:**

- Always keep the lift basket closed
- Never climb on or lean over the basket
- Know the lift's load and don't exceed it
- Don't make lift modifications without manufacturer approval
- Set up aerial lift on level, stable surface
- Watch for debris, holes, bumps
- Always wear fall protection
- Tie off to the lift
- Test lift controls daily
- Set brakes and outriggers on aerial lift
- Chock the wheels if lift is on an incline
- Do not move the lift truck while boom is elevated and manned



Search

Index



Advanced Search | A-Z



## Aerial Lifts Safety Tips

Aerial lifts include boom-supported aerial platforms, such as cherry pickers or bucket trucks. The major causes of fatalities are falls, electrocutions, and collapses or tip overs.

### Safe Work Practices

- Ensure that workers who operate aerial lifts are properly trained in the safe use of the equipment.
- Maintain and operate elevating work platforms in accordance with the manufacturer's instructions.
- Never override hydraulic, mechanical, or electrical safety devices.
- Never move the equipment with workers in an elevated platform unless this is permitted by the manufacturer.
- Do not allow workers to position themselves between overhead hazards, such as joists and beams, and the rails of the basket. Movement of the lift could crush the worker(s).
- Maintain a minimum clearance of at least 10 feet, or 3 meters, away from the nearest overhead lines.
- Always treat powerlines, wires and other conductors as energized, even if they are down or appear to be insulated.
- Use a body harness or restraining belt with a lanyard attached to the boom or basket to prevent the worker(s) from being ejected or pulled from the basket.
- Set the brakes, and use wheel chocks when on an incline.
- Use outriggers, if provided.
- Do not exceed the load limits of the equipment. Allow for the combined weight of the worker, tools, and materials.

#### For more complete information:



OSHA 3267-09N-05